

VCU 02-14

10/565,852

02940323aa

Amendment dated 09/17/2007

Reply to office action mailed 06/15/2007

Amendments to the Specification:

Please replace the paragraph beginning at page 2, line 8, with the following rewritten paragraph:

There are two "windows" to the interior of the skull for "seeing" brain pressure: the ear and the eye. Intra cranial pressure (ICP) in the brain is DIRECTLY communicated to both the eye and ear. The eye is more convenient to non invasively monitor changes in ICP. Ear monitoring of changes in cerebral spinal fluid (CSF) pressure have been attempted but have not resulted in a feasible clinical device. Direct measures of skull vibration by using ultrasonic probes have also been attempted, but with limited success because it is technically complicated, and is not a promising clinical alternative. Eye pressure does correlate with CSF pressure and various approaches have been used since eye pressure assessment is a common ophthalmological procedure.

Please replace the paragraph beginning at page 4, line 17, with the following rewritten paragraph:

The technique of the invention is to use acoustic signals and transducers on the surface of the skin of the head and over closed eyelids to non-invasively monitor intra cranial pressure. Intra cranial pressure changes are detected non-invasively using acoustic eye patches that are comfortable, accurate and provide a rapid and

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sensitive reading. A piezoelectric film sensor is placed in contact with the eye or eyelid of each eye.

Please replace the paragraph beginning at page 4, line 26, with the following rewritten paragraph:

~~An A~~ method and apparatus according to the invention measures intra cranial pressure ~~uses~~by using an acoustic eye patch conformably adapted to an eyeball of a patient, the eye patch having sensors for measuring acoustic signals. The eye patches have piezoelectric film sensors for measuring the acoustic signal. An ultrasonic sweep generator applies acoustic signals across the skull of the patient, the signals sweeping a predetermined range. An analyzer determines from an output of the acoustic eye patch an intra cranial pressure. In one embodiment the predetermined range is in the ultrasonic band and an analyzer determines from the output of the sensors a resonant frequency and a damping of acoustic amplitude at ~~said the~~ resonant frequency, there being a correlation between ~~said the~~ damping and intra cranial pressure. In another embodiment the predetermined range includes a range less than 20 kHz and the analyzer determines retinal artery pulsations, with pressure being applied to the eye until the pulsations disappear, such pressure being a measure of intra cranial pressure.